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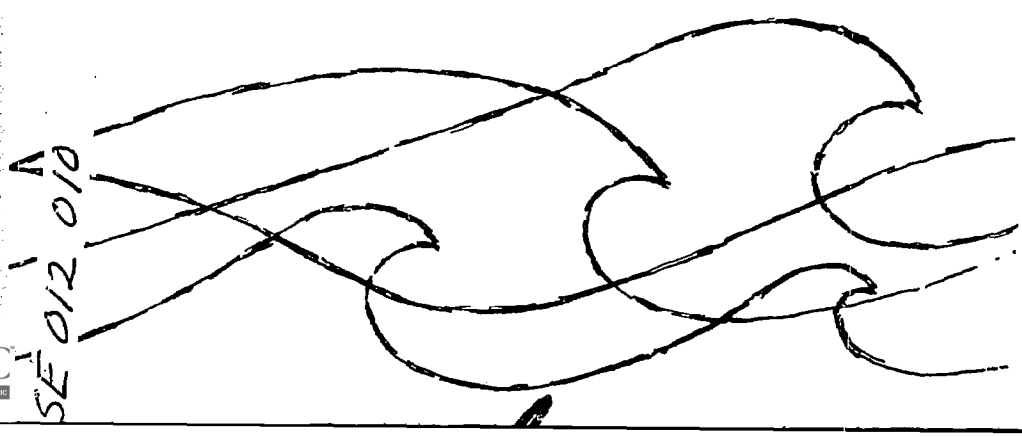
ABSTRACT

Forty-eight motion picture films and filmstrips in the field of marine science are catalogued in this booklet. Following the alphabetical index, one page is devoted to each film indicating its type, producer, recommended grade level, running time, and presence of color and/or sound. A summary of film content, possible uses, and outstanding features are enumerated. In addition, mention is made of over three hundred 35 mm slides of marine life forms and habitat available from the Center. This work was prepared under an ESEA Title III Contract. (BL)

MARINE SCIENCE FILM CATALOGUE

By Frank L. Chapman



CATALOGUE
OF
MARINE SCIENCE
MOVIES, FILMSTRIPS, AND SLIDES

AVAILABLE FROM
THE CARTERET COUNTY
AUDIO-VISUAL AID CENTER

prepared by:
Frank L. Chapman
Regional Carteret County
Marine Science Project

INDEX OF MOVIES AND FILMSTRIPS

(35mm slides on page 33)

*filmstrip

16mm Movie, No. 75

"Challenge of the Oceans" Produced by McGraw-Hill Book Co.

This film is suitable as the introduction or culmination of a unit on oceanology. It stresses techniques and training necessary for the oceanologists.

The first half of the film deals with physical aspects of oceanology. With clever photography and meaningful scenes, it covers history, climate, currents, instrumentation, water properties and importance of the many sciences within oceanology. The second part of the film deals with biological aspects of oceanology. It begins with the circulation of nutrients and stresses the importance of plankton as food for larger organisms. The film then turns to exploration of the deep seas and deep sea equipment. The narrator ends the film by emphasizing the challenges which the sea holds for modern man.

Recommended: Seventh grade and older.

Data: Running time 29 minutes; color; sound.

16mm Movie, No. 76

"Count Down Under" Produced by National Educational Television

This is an excellent film to show mature audiences interested in oceanology. The theme is a trip to the Indian Ocean aboard the research vessel "Pioneer." Scientists from all over the world participate in the research.

Interviews with the crew and scientists give the film a rather personal touch. Hardships, pleasures, and everyday living are filmed in genuine circumstances.

The movie shows the ocean as a storehouse of untouched natural resources. It ends by showing how man is harnessing the never-ending power of the tides and how he will one day live on and under the sea.

Highly recommended as a culmination to a section on oceanology or as supplementary material.

Data: Running time, 50 minutes; black and white; sound.

Recommended: Tenth grade and older.

16mm Movie, No. 77

"The Earth: Its Oceans" Produced by Coronet Films

The film starts out by naming the five oceans. A short history of oceanology follows. Emphasis is placed on the many fields of science that make up oceanology.

Major geological features of the ocean's floor are discussed with good diagrams. Physical features of water are discussed, with practical application stressed. A salt factory and magnesium mine are shown.

The film is recommended as an introduction or culmination to a unit on ocean studies.

Recommended: Sixth grade and older.

Data: Running time 13½ minutes; color, sound.

16mm Movie, No. 78

"What's Under the Ocean" Produced by Film Associates of California

This is one of relatively few oceanological movies suitable for elementary grades. It covers very general concepts and methods of studying the ocean. The first part of the film deals with man's reach beneath the seas. It pictures various methods of diving and studying the ocean. Basic characteristics of ocean basins are pointed out.

The next section deals with research vessels, instruments and techniques. Echo sounders and clam-jawed buckets are two of the instruments discussed.

The final section deals with the contours of the ocean floor. This is done by using an excellent model (filled with dyed water) of the Atlantic and Pacific Oceans. As the model is drained, the features are exposed and described.

Recommended: Fifth grade and older.

Data: Running time 13 minutes; color, sound.

16 mm Movie No. 79

"Survival in The Sea — Where Land and Water Meet"

Produced by University of Miami

The setting for this film is the tropical waters of the Atlantic Ocean. It attempts to cover all of the habitats where the water ends and land begins. The animals are described in relation to their form and the particular habitats they occupy. The spray zone, surf zone, mangrove swamp, rocky zone, and tide pool are some of the habitats covered. Some of the animals described are ghost crab, sand flea, blue crab, sea hare, puffer fish, fiddler crab, horseshoe crab, barnacle, sea urchin, and others.

The color is good and the film can be of use to students of marine biology on the North Carolina coast.

Recommended. Seventh grade and older.

Data: Running time, 29 minutes; color; sound.

16mm Movie, No. 80

"The Beach-A River of Sand"

Produced by Encyclopaedia Britannica Films

This exceptional film is a must for a unit on the interaction between land and the sea. It sequentially follows "Waves on Water." Unusually good photography and narrator enhance the effectiveness of this film.

The film begins by examining the makeup of a beach. The dynamics of the beach are then covered. The wave tank effectively shows the movement of sand by waves as the waves "feel the bottom." The littoral current and the littoral drift is demonstrated. Aerial photographs effectively show some of the natural dynamics that cannot be seen by standing on the beach.

The last part of the film is concerned with man's devices for stabilizing beaches, harbors, and inlets. In the laboratory, a mock-up of the Santa Barbara, California, harbor is used to show how sand builds up as a spit. Dredges are shown as tools to keep the littoral drift operating. Although the film deals with the California coast, much the same situations occur on the Atlantic Coast. The film is highly recommended as supplementary material for a unit on the dynamics of the beach.

Recommended: Eighth grade and older.

Data: Running time, 20 minutes; color and sound.

16mm Movie, No. 81

"Tides of the Ocean" Produced by Academy Films

This movie can be a perfect follow-up to a unit on the tides. The movie is well ordered and cleverly presented. Beautifully animated diagrams enhance this film as a teaching tool. The film begins by introducing some of the phenomena associated with tides: tidal currents, tidal bore, and extreme highs and lows of some areas. A short history of the study of tides follows. The causes of tides are explained and illustrated. The last part of the film is concerned with factors that affect the tides. This film is highly recommended.

Recommended: Eighth grade and older.

Data: Running time 16½ minutes; color; sound.

16mm Movie, No. 82

"Waves on Water" Produced by Encyclopaedia Brittanica Films

This film is a splendid treatment of the creation, anatomy, and movement of waves. It covers wind waves and seismic waves. The photography and narration are ingenious.

Wind waves are treated in detail first. A large wave tank with a fan helps show how waves are formed. The movement of water particles under the influence of a wave is shown by using neutrally bouyant particles in a wave tank. The action of the particles as the wave reaches shallow water is demonstrated. Aerial views of the coast demonstrate refraction of waves in a unique manner.

The last theme of the movie shows the production and the effects of seismic waves in the Pacific Basin.

This film, with its unique lab type examples, followed with nature's own examples, can be used effectively with a unit on water waves.

Highly recommended as supplementary material.

Recommended: Eighth grade and older.

Data: Running time 16 minutes; color; sound.

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Recommended: Eighth grade and older.

Data: Running time, 20 minutes; color and sound.

16mm Movie, No. 85

"Life in the Oceans"

Produced by Film Associates of California

This film sticks to the theme implied by the title. It presents, in no particular order, many of the common forms or organisms found in the ocean. The organisms are Pacific Ocean forms, but representative types can be found from the Atlantic. Some definations and descriptions are added. Living organisms shown include diatoms, starfish, sea urchins, seacucumber, polychaete, sea slug, crab, fish, turtle, seal and porpoise. The movie ends with a review of the types of animals found. It can be used to advantage by the elementary teacher interested in showing the variety of animals living in the sea.

Recommended: Third grade to seventh grade.

Data: Running time 15 minutes; color; sound.

16mm Movie, No. 86

"Marine Ecology" Produced by McGraw-Hill Text Films

This film is a good introduction to marine ecology. The narrator is George L. Clark of Harvard University and Woods Hole. He builds a general background of the physical and biological aspects before getting to the ecosystem complex.

Practical application of ecology to the problems of the world's diminishing food supply begins the film. History and importance of techniques is stressed. "Plankton", "Nekton" and "benthos" are defined and the fauna and flora of the three types are discussed. Major zones of the sea and their relation to organisms are also discussed. Limiting factors are discussed in relation to distribution of marine organisms. Some of the topics are water, currents, temperature, and light.

Adaptations of deep sea organisms are considered along with a short study of bioluminescence.

The last part of the film covers a general and a specific ecosystem. The diagrams are good and the system is well covered in the narration. Seasonal factors are stressed. The film is a must for a unit dealing with marine ecology.

Recommended: Seventh grade and older.

Data: Running time, 28 minutes; color; sound

16mm Movie, No. 87

"Plankton and the Open Sea" *Produced by Encyclopaedia* Brittanica Films

This is a good general movie showing methods of collecting and studying plankton. Emphasis is placed on plankton as the pasturage of the sea. It is noted that many large and important species spend some larval stages of their life as plankton. The theme is backed up not only with good microphotographs of planktonic organisms, but excellent shots of the research vessel, scientists, and crewmen all working toward a common goal.

Recommended: Seventh grade and older.

Data: Running time, 19 minutes; color; sound.

16mm Movie, No. 88

"Sea Shell Animals" Produced by Film Associates of California

This movie can be of great advantage to the elementary teacher. Although the animals are Pacific coast organisms, similar species can be found in North Carolina.

The movie begins with Sally and Jack looking for sea shells. Definitions of mollusks and sea shells follow. Basic forms (bivalve, univalve, limpet, etc.) are discussed in relation to molluscan anatomy. Some of the animals discussed are chiton, mussel, clam, limpet, abalone, cowry, and octopus. The movie ends by challenging the student to the fun of collecting and arranging sea shells.

Recommended: Third grade to seventh grade.

Data: Running time, 10 minutes; color; sound.

16mm Movie, No. 89

"Secrets of the Underwater World"

Produced by Walt Disney Studios

The movie illustrates the amazing adaptations of some intriguing fresh and salt water organisms. A male stickleback fish, diving spider, archer fish, kelpfish, angler fish, and decorator crab, are some of the creatures that perform for the camera. The movie provides good examples of the variety of life and habitats found in fresh and salt water.

Typical Disney treatment, includes humanization of the "actors".

Recommended: Elementary grades.

Data: Running time, 16 minutes; color; sound.

"Survival in The Sea — Life on The Coral Reef"

Produced by University of Miami

The setting for this film is the tropical waters of the Atlantic Ocean. A detailed study of the animal and the type structure (soft or hard coral) it builds begins the film. The camera follows a diver, Dr. Storr, as he travels across three zones of the coral reef. Explanation of the corals, the reef, and the animals associated with the reef are given. The underwater shots are beautiful and of quality for teaching. Adaptation is stressed to the various habitats. A short review of some of the basic principles ends the film.

Recommended: Seventh grade to Twelfth grade.

Data: Running time, 29 minutes; color; sound.

16mm Movie, No. 91

"Survival in the Sea - The Life Cycle"

Produced by Indiana University

An interesting correlation of land plants to marine plants introduces this movie. The theme, as the title suggests, is the life cycle in the sea. The movie is relatively extensive in its handling of producers, consumers and decomposers. Much emphasis is placed on feeding merchanisms of various organisms. The movie is very well organized. It is highly recommended as a supplement to a unit or course in biology, be it marine or general.

Recommended: Seventh grade and older.

Data: Running time, 29 minutes; color; sound.

16 mm Movie, No. 92

"Waves Across the Pacific" McGraw-Hill Text Films

Basic wave descriptions and characteristics are cleverly brought-to-light in this excellent documentary-type film. The film story covers the research efforts of Scripps Institute oceanologists. Their study is to determine the energy relationships of waves produced by Antarctic storms as they journey across the Pacific Ocean to Alaska.

The story begins with the planning of the project. The instruments used in this project to measure and record the waves are thoroughly discussed. The film very convincingly demonstrates the use of computors in modern oceanological research. The selection of the six stations along the path of the waves in the Pacific is considered along with the difficulties of placing the recording instruments. The stations are placed in New Zealand, Samoa, Palm Islands on the equator, Honolulu, the North Pacific, and Alaska.

The station in the North Pacific is shown in some detail. Since there are no land bases here, the project used the research vessel "Flip". This unique vessel travels in a conventional manner to its station. Once there however, the majority of the vessel fills with water and the whole vessel tilts upward with only the stern section out of the water. This produces a very stable platform for the instruments.

The film ends with Dr. Monk, chief scientist, stating some of the things that were accomplished by the study. He also mentions how the study disproved one of his theories and how it opened the door for more thought.

Recommended: Eight grade and older

Data: Running time, 30 minutes; color; sound.

16mm Movie, No. 93

"Adaptation to a Marine Environment" Produced by

McGraw-Hill Text Films

The salt water habitat of a Thailand amphibian provides the subject for this film. Well known scientists are followed as they study the frog.

The film starts off by introducing the scientists and the problem with which they are confronted. Each step is closely followed as they proceed through their experiments. The problems of physiological balance, which the frog's system must deal with, is added to make the experimental sequence comprehensible to the audience. The film ends on a tone of challenge to the audience.

Because the thoughts expressed by this film are rather mature, high school students would derive the most benefit from the film. However, seventh graders could definitely benefit.

Recommended: Seventh grade and older.

Data: Running 18 minutes; color; sound.

16mm Movie, No. 94

"The Earth Beneath the Sea" Produced by McGraw-Hill Text Films

This excellent film is narrated by Dr. Maurice Ewing of Lamont Geological Observatory at Columbia University. Dr. Ewing, in a unique manner, describes not only what oceanologists study, but how they study it.

An oceanological voyage of the research vessel "Conrad" sets the scenes for the film. Aboard the "Conrad," the audience gets an oceanologist's view of various research instruments. After the instrument is seen in operation, the data it gathers and the use of the data is discussed. Some of the instruments are precision depth recorder, deep sea camera, bottom corer, dredge, magnotometer, and seismic profiler.

"The Earth Beneath the Sea" takes a scientific attitude toward the subject. It is highly recommended as supplementary material.

Recommended: Eighth grade and older.

Data: Running time 22 minutes; color, sound.

Filmstrip

"The Oceans" Produced by McGraw-Hill Text Films

This filmstrip is elementary in approach. It is excellent as an introduction to oceanology. It begins with the history of the oceans. It covers extinct organisms, the ocean as a barrier to races of people, and as a great highway of travel. Other subjects covered are tides, climate control, currents, moisture reservoir, mineral bank, food reservoir (fish), source of fresh water, bottom topography, methods of exploration, and earth layers.

Recommended: Fourth grade through seventh grade.

Data: Color; paintings with subscripts.

Filmstrip

"The Sea" Produced by UNESCO (United Nations)

"La Mer"

"El Mar"

This filmstrip seems designed for high school students. It treats oceanology on a general and world-wide scale from shorelines to ocean depths. Narration is read by the instructor. This film can be used effectively as an introduction or culmination to a course on marine science. Incidentally, the script is available in French, Spanish and English.

Recommended: Eighth grade through twelfth grade.

Data: Script may be read in French, Spanish, or English.

Part VII

"Creatures of the Sea"

The filmstrip does an excellent job of covering some basic knowledge about life in the sea. It covers: the ocean as a medium, body forms of animals, plankton, Nekton, benthos, locomotion, food cycles, defense, and reproduction.

Part VIII

"The Coral Reef"

An excellent depiction of general aspects of the coral reef is given by this filmstrip. The film shows structure, limiting factors, types of coral reefs etc. Special emphasis is placed on the history of and forces working on the Great Barrier Reef of Australia. The formation of coral islands and the animals that subsequently inhabit them are discussed. The last part deals with vertebrates and invertebrates that inhabit a reef.
Recommended: High School.

Data: Color photographs and diograms; subscripts.

"Understanding Oceanography" Five Filmstrips

Society for Visual Education, Inc.

This series is excellent as a supplement to units on oceanology. They may be shown separately or as a unit. The narration is on 33 1/3 R.P.M. records or the teacher may read from a prepared script. This film is highly recommended as supplementary material.

"The Study of Oceans"

The history of ocean study begins the filmstrip. This subject is followed by: "Importance of the Sea," "Indirect Observation," and "Direct Observations."

The representations are drawn and narration is good. The subjects are adequately covered for beginners in oceanography.

"The Ocean Basins"

The subjects of this filmstrip are: "The Earth's Crust," "The Continental Shelves," "Topography of the Ocean Basins," and "Theories About the Ocean-Basins."

This is an excellent up-to-date, story of the above subjects.

"Characteristics of Sea Water"

The subjects in this filmstrip are: "The Nature and Composition of Sea Water," "Chemical Reactions in the Sea," "Salinity," "Temperature, and Circulation," and "Sight and Sound in the Sea."

This is an excellent filmstrip adequately covering the subjects above. Its coverage is up-to-date and scientifically presented.

"Currents, Waves and Tides"

Subjects covered are: "Ocean Currents," "Waves Caused by Winds," "Tsunamis," and "Tides."

An excellent and informative narrative. Excellent representation.

"Life of the Open Sea"

Subjects covered by this filmstrip are: "The Floating World," "The Plankton-Why They Float and Where They are Found," "The Nekton and Their Feeding Habits," and "Food From the Sea."

The subjects are well covered. An excellent presentation.

"Ocean Engineering"

This filmstrip deals with man's technological efforts in the sea. It describes mining operations and research projects.

"Marine Resources"

This filmstrip covers topics from the oceans as commercial highways to harvesting of fish. It is directed toward a better understanding of the resources available for man's use.

"Air-Sea Interaction"

The interaction between ocean and atmosphere is the subject. The importance of CO_2, evaporation, and heat transfer are some of the subjects covered.

"A Career in Oceanography"

This filmstrip tells how a young person interested in oceanography may pursue his or her career. The study of subjects related to oceanology are shown as important background for a career.

Recommended: High School.

Data: Running time for phonograph records is about 20 minutes for each filmstrip.

Color; Paintings. Printed scripts.

Five Filmstrips

"The World We Live In" Produced by Life Filmstrips

The photography of this series is excellent. The whole group appears to be directed for tenth grade and above. Narration is on the screen. Stimulating discussion of controversial ideas are entered. Recommended for a high school unit in science.

Part I

"The Earth is Born"

This filmstrip is excellent on the evolution of the earth and related planets. History is related from cosmic dust to earth in its present form.

Part II

"The Miracle of the Sea"

This filmstrip covers the creation of the oceans, names of the oceans, topography of the bottom, life, currents, winds, tides, waves, and shore erosion.

Part III

"Mighty Currents of the Sea"

This filmstrip begins with the creation of the ocean currents and covers currents and the suns heat, currents and the earths rotation, currents and the winds, and counter currents. The last part deals with the Gulf Stream and a new theory of the ice ages.

Part VII

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Subjects covered are: "Ocean Currents," "Waves Caused by Winds," "Tsunamis," and "Tides."

An excellent and informative narrative. Excellent representation.

"Life of the Open Sea"

Subjects covered by this filmstrip are: "The Floating World," "The Plankton-Why They Float and Where They are Found," "The Nekton and Their Feeding Habits," and "Food From the Sea."

The subjects are well covered. An excellent presentation.

"Life of the Sea Floor and Shore"

Subjects covered by this filmstrip are: "Communities in the Seas," "Communities of Coral Reefs and Shallow Waters," "Plants and Animals of the Seashore," and "Life in the Deep Sea."

A good ecological approach is taken in this filmstrip. An excellent supplement to a study of marine communities.

Recommended: Seventh grade and older

Data: Color; paintings. Subscripts and teacher's guides.

33 1/3 R.P.M. recordings.

Four Filmstrips

Ocean Transportation — Imperial Film Co.

"A Liner in Port"

Docking and leaving dock is the subject of this filmstrip. It covers events from the moment a liner enters port until it leaves. The excellent pictures show tugs, stevedores, cranes, and equipment necessary to load and unload liners.

"The Work Ships Do"

Diffferent types of ships do different jobs. This is the theme of "The Work Ships Do." It shows liners, barges, freighters, and tankers. Some of the cargo and how it is loaded and unloaded is also shown.

"Ships Large and Small"

Ships and boats from ocean liners to atomic submarines are shown. The job they perform and some of the equipment used aboard these vessels is demonstrated.

"Going to See"

"Going to See" covers many of the subjects that a student may ask about a ship or port. Some of the subjects covered are stanchions, ropes, rat shields, depth numbers, channel markers, flags, stevedores, and harbormasters. Good filmstrip to show inquisitive students.

Recommended: Fourth grade and older.

Data: Color; subscripts. Photographs.

Filmstrip

Society for Visual Education, Inc.

"Songs of the Sea"

An excellent representation of chanties sung by America's sailing men. The filmstrip includes a recording that goes with the pictures. Four songs are sung: Haul Away Joe; Blow the Man Down; Rio Grande; and Shenandoah. A history of the song is given by the narrator.

Recommended: Fourth grade and older.

Data: Color (hand drawn); 33 1/3 R.P.M. Record.

Birds Imperial Film Co.

"Some Functions of Feathers" *Three Filmstrips*

Feathers are shown as functioning in flight, insulation, protection, and camouflage in this filmstrip. The pictures represent the subject well. Narration is by subscript.

"Nesting and Feeding the Young"

This filmstrip shows nest types, nesting, feeding the young and adult feeding behavior. Many nice photos represent the subject.

"Food Habits of Water Birds"

The adaptations and feeding habits of various species of water birds are shown. The photographs are very good and the narration appropriate.

Recommended: Seventh grade and older.

Data: Color; subscript. Photographs.

35mm Slides

About three hundred Kodacolor slides were obtained from Turtox (General Biological Supply House, Chicago). Although some of these slides are of questionable quality, the majority are good enough to illustrate the general nature of the plant, animal, or place they depict. If carefully selected, they can be useful teaching tools.

Algae	67
Sponges	4
Coelenterates	33
Mollusks	62
Annelids	4
Arthropods	10
Echinoderms	32
Marine Fishes	38
Marine Vertebrates	9
Selected Habitats	20
Assorted turtox charts (mostly mammals) (No Keys includes)	40

In addition to commercially-prepared slides, the Marine Science Project is building up a file of original 35 mm slides. These are primarily of project activities, natural habitats, and marine life forms as they are found in nature.

16 MM Movie, No. 95

"History: Layer by Layer" McGraw-Hill Text Films

Sedimentation, sediment types, and how sediments on the ocean's floor describe earth history is the basic theme of this movie. Dr. David Ericson's sedimentary study at Lamont Geological Laboratory is the subject.

The adaptations of Foraminifera through millions of years are described as indicators of past physical conditions on the earth. A short history of sediment study leads to a voyage aboard the research vessel "VEMA", where the audience can see how forams are recovered from the ocean's floor.

After the piston corer is lowered into the ocean, a detailed description of how the corer and associated equipment works is made. Data taking is shown as very important in scientific work. The exact location where the core was taken, the depth of the water, and the time it was taken are all pertinent. The excitement and anticipation of the crew and chief scientist, Dr. Drake, as they await recovery of the corer, heightens attention.

The last part of the story takes place in the laboratory. The processes performed on cores before they can be studied are shown in detail. Dr. Ericson shows some of the information obtained from cores and describes how cores can lend more information in the future.

Recommended: Eighth grade and older.

Data: Running time, 25 minutes; color; sound.

AN E.S.E.A. TITLE III PUBLICATION

by the

REGIONAL MARINE SCIENCE PROJECT

of the

CARTERET COUNTY PUBLIC SCHOOLS

Beaufort, N. C.

T. LENWOOD LEE, *Superintendent*

This publication is designed for use as part of a curriculum series developed by the Regional Marine Science Project of the Carteret County Public Schools, financed primarily by ESEA TITLE III. The series will include three-week teaching units in marine science for grades 4-10 and two full-year high school courses in advanced biology.

All materials take an ecological approach to nature, stressing the ties between culture, economy and resource use. Field work is an integral part of the curriculum.

Publications are distributed at cost to interested school systems. Most are designed for wide spread use on the central eastern seaboard. Address inquiries to:

Will Hon
Project director,
and series editor.